

objective. The surface of the membrane (tympanule of Lespès) is naked. It is strongly probable that this is an olfactory organ, and placed on the underside of the palpi, next to the mouth, so as to enable the insect to select its proper food by its odour, giving an additional sensory function to the palpi of insects. There are no special sense-organs in the antennæ.

Lespès, in his note on the auditory sacs which he says are found in the antennæ of nearly all insects, says that, as we have in insects compound eyes, so we have *compound ears*. I might add that in the abdominal appendages of the cockroach we have a *compound nose*. In the palpi of *Perla*, and the abdominal appendages of *Chrysopila*, the "nose" is simple.

On examination I have found sense-organs in both pairs of antennæ of *Homarus americanus* (the lobster), such as are described by Farre, and also the more rudimentary form of supposed auditory organs in the common spiny lobster (*Palinurus*) of Key West, Florida.—*American Naturalist*, vol. iv. Dec. 1870.

*On the Carboniferous Flora of Bear Island (lat. 74° 30' N.).*

By Professor OSWALD HEER, F.M.G.S.

The author described the sequence of the strata supposed to belong to the Carboniferous and Devonian series in Bear Island, and indicated that the plant-bearing beds occurred immediately below those which, from their fossil contents, were to be referred to the Mountain-limestone. He enumerated eighteen species of plants, and stated that these indicated a close approximation of the flora to those of Tallowbridge and Kiltorkan in Ireland, the greywacke of the Vosges and the southern Black Forest, and the *Verneuilii*-shales of Aix and St. John's, New Brunswick. These concordant floras he considered to mark a peculiar set of beds, which he proposed to denominate the "Ursa-stage." The author remarked that the flora of Bear Island has nothing to do with any Devonian flora, and that consequently it and the other floras, which he regards as contemporaneous, must be referred to the Lower Carboniferous. Hence he argued that the line of separation between the Carboniferous and Devonian formations must be drawn below the yellow sandstones. The presence of fishes of Old-Red-Sandstone type in the overlying slates he regarded as furnishing no argument to invalidate this conclusion. The sandstones of Parry Island and Melville Island are also regarded by the author as belonging to the "Ursa-stage," which, by these additions, presents us with a flora of seventy-seven species of plants. The author remarked upon the singularity of plants of the same species having lived in regions so widely separated as to give them a range of  $26\frac{1}{2}^{\circ}$  of latitude, and indicated the relations of such a luxuriant and abundant vegetation in high northern latitudes to necessary changes in climate and in the distribution of land and water.—*Proc. Geol. Soc.* Nov. 9, 1870.